

From the INTERNATIONAL BUREAU

**PCT**

NOTIFICATION OF TRANSMITTAL  
OF COPIES OF TRANSLATION  
OF THE INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY  
(CHAPTER I OR CHAPTER II)  
OF THE PATENT COOPERATION TREATY  
(PCT Rules 44bis 3(c) and 72.2)

Date of mailing (*day/month/year*)  
**21 December 2007 (21.12.2007)**

To:

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Applicant's or agent's file reference <b>FKR06002WO</b>	<b>IMPORTANT NOTIFICATION</b>
International application No. <b>PCT/JP2006/310696</b>	International filing date ( <i>day/month/year</i> ) <b>29 May 2006 (29.05.2006)</b>
Applicant <b>KURARAY CO., LTD. et al</b>	

**1. Transmittal of the translation to the applicant.**

The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter I).



The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter II).

**2. Transmittal of the copy of the translation to the designated or elected Offices.**

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following designated or elected Offices requiring such translation:

**EP**

The following designated or elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

AE, AG, AL, AM, AP, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EA, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OA, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

**3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).**

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability (Chapter II).

**It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned within the applicable time limit (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.**

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer <b>Masashi Honda</b> e-mail: pto8.pct@wipo.int
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# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference <b>FKR06002WO</b>	<b>FOR FURTHER ACTION</b>	
	See item 4 below	
International application No. <b>PCT/JP2006/310696</b>	International filing date ( <i>day/month/year</i> ) <b>29 May 2006 (29.05.2006)</b>	Priority date ( <i>day/month/year</i> ) <b>03 June 2005 (03.06.2005)</b>
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant <b>KURARAY CO., LTD.</b>		

<p>1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.</p>																								
<p>3. This report contains indications relating to the following items:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; text-align: center; padding-right: 10px;"><input checked="" type="checkbox"/></td> <td><b>Box No. I</b></td> <td>Basis of the report</td> </tr> <tr> <td style="text-align: center; padding-right: 10px;"><input type="checkbox"/></td> <td><b>Box No. II</b></td> <td>Priority</td> </tr> <tr> <td style="text-align: center; padding-right: 10px;"><input type="checkbox"/></td> <td><b>Box No. III</b></td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center; padding-right: 10px;"><input type="checkbox"/></td> <td><b>Box No. IV</b></td> <td>Lack of unity of invention</td> </tr> <tr> <td style="text-align: center; padding-right: 10px;"><input checked="" type="checkbox"/></td> <td><b>Box No. V</b></td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center; padding-right: 10px;"><input type="checkbox"/></td> <td><b>Box No. VI</b></td> <td>Certain documents cited</td> </tr> <tr> <td style="text-align: center; padding-right: 10px;"><input type="checkbox"/></td> <td><b>Box No. VII</b></td> <td>Certain defects in the international application</td> </tr> <tr> <td style="text-align: center; padding-right: 10px;"><input type="checkbox"/></td> <td><b>Box No. VIII</b></td> <td>Certain observations on the international application</td> </tr> </table> <p>4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).</p>	<input checked="" type="checkbox"/>	<b>Box No. I</b>	Basis of the report	<input type="checkbox"/>	<b>Box No. II</b>	Priority	<input type="checkbox"/>	<b>Box No. III</b>	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	<b>Box No. IV</b>	Lack of unity of invention	<input checked="" type="checkbox"/>	<b>Box No. V</b>	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	<b>Box No. VI</b>	Certain documents cited	<input type="checkbox"/>	<b>Box No. VII</b>	Certain defects in the international application	<input type="checkbox"/>	<b>Box No. VIII</b>	Certain observations on the international application
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<p>The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Faxsimile No. +41 22 338 82 70</p>	<p>Date of issuance of this report <b>06 December 2007 (06.12.2007)</b></p> <p>Authorized officer <b>Masashi Honda</b> e-mail: pt08.pct@wipo.int</p>
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**PATENT COOPERATION TREATY**

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

*TRANSLATION*  
**PCT**

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

(PCT Rule 43bis 1)

		Date of mailing (day/month/year)
Applicant's or agent's file reference <b>FKR06002WO</b>		<b>FOR FURTHER ACTION</b> See paragraph 2 below
International application No. <b>PCT/JP2006/310696</b>	International filing date (day/month/year) <b>29.05.2006</b>	Priority date (day/month/year) <b>03.06.2005</b>
International Patent Classification (IPC) or both national classification and IPC*		
Applicant <b>KURARAY CO., LTD.</b>		

<p>1. This opinion contains indications relating to the following items:</p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Box No. I Basis of the opinion</li> <li><input type="checkbox"/> Box No. II Priority</li> <li><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li> <li><input type="checkbox"/> Box No. IV Lack of unity of invention</li> <li><input checked="" type="checkbox"/> Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li><input type="checkbox"/> Box No. VI Certain documents cited</li> <li><input type="checkbox"/> Box No. VII Certain defects in the international application</li> <li><input type="checkbox"/> Box No. VIII Certain observations on the international application</li> </ul> <p>2. <b>FURTHER ACTION</b></p> <p>If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.</p> <p>If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.</p> <p>For further options, see Form PCT/ISA/220.</p> <p>3. For further details, see notes to Form PCT/ISA/220.</p>		
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Name and mailing address of the ISA/JP	Date of completion of this opinion	Authorized officer
Facsimile No.		Telephone No.

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/JP2006/310696

**Box No. I Basis of this opinion**

1. With regard to the language, this opinion has been established on the basis of:  
 the international application in the language in which it was filed  
 the translation of the international application into \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (Rule 12.3(a) and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material  
 a sequence listing  
 table(s) related to the sequence listing
  - b. format of material  
 on paper  
 in electronic form
  - c. time of filing/furnishing  
 contained in the international application as filed  
 filed together with the international application in electronic form  
 furnished subsequently to this Authority for the purposes of search
3.  In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT / JP2006/310696

Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	
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**1. Statement**

Novelty (N)	Claims	1-18	YES
	Claims	_____	NO
Inventive step (IS)	Claims	13, 18	YES
	Claims	1-12, 14-17	NO
Industrial applicability (IA)	Claims	1-18	YES
	Claims	_____	NO

**2. Citations and explanations:**

Document 1: JP, 2002-326303, A (Nippon Shokubai Co., Ltd.), 12 November, 2002 (12.11.02)

Document 2: JP, 2003-292713, A (Rengo Co., Ltd.), 15 October, 2003 (15.10.03)

Document 3: WO, 2003-091317, A1 (Kureha Chemical Industry Co., Ltd.), 6 November, 2003 (06.11.03)

The subject matters of claims 1-18 are not described in any of the documents cited in the ISR, and appear to be novel.

The subject matters of claims 1-12 and 14-17 do not appear to involve an inventive step in view of documents 1 and 2 cited in the ISR.

Document 1 (claim 2) describes a gas barrier film having a layer made by coating the surface of a plastic film with a composition obtained from an organic polymer (A) having a polar function group in the molecule, an organic silicon compound (B) represented by the formula  $R_{m}^1Si(OR^2)_n$  and/or a product of hydrolytic condensation of such compound, and an organic compound (C) having (a) a function group capable of reacting with the function group of an organic polymer (A) and (b) an SiOR<sup>2</sup> group. Said document also mentions that examples of said organic polymer (A) are organic polymers containing carboxylic groups such as poly(meth)acrylic acids and (meth)acrylic acid copolymers (paragraph [0030]), that examples of said organic silicon compound (B) are  $\gamma$ -mercaptopropyltrimethoxysilane and  $\gamma$ -mercaptopropyltriethoxysilane (paragraph [0036]), that more than one species of organic polymer (B) can be used (paragraph [0037]), that the proportion of an organic polymer (A) combined is normally 5-70 mass%, preferably 10-60 mass%, or more preferably 15-40 mass% to the total of all the components except the solvents (paragraph [0047]), that the proportion of an organic silicon compound (B) combined is normally 20 mass%, preferably 30-80 mass%, or more preferably 50-70 mass% (paragraph [0048]), and that it is excellent in transparency (paragraph [0079]), and also mentions in an example that an organic silicon compound (B) is added to a mixture of an organic polymer (A) and an organic compound (C) after they reacted with each other, to obtain a coating liquid (Example 1).

It is, however, not mentioned that a carboxylic group in an organic polymer (A) is neutralized with hetero-valent metal ions.

Document 2 (claims 1, 4 and 6) describes (I) a gas barrier resin composition made by means of reaction of (1) a polycarboxylic polymer selected from among poly(acrylic acids), polymethacrylic acids and those acids as partially neutralized, with (2) (a) an organic metal compound capable of being crosslinked with a carboxylic group, and (b) hetero-valent metal ions, by which said polycarboxylic polymer has a part crosslinked with said organic metal compound and a part crosslinked with said hetero-valent metal ions, wherein the ratio by weight of said

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No

PCT/JP2006/310696

Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

polycarboxylic polymer to said organic metal compound is in a range of 99.9:0.1 to 50:50, and (II) a gas barrier film made by putting a coat over said composition as a base material. Said document also mentions in paragraph [0013] that the extent of neutralization of the above-mentioned acids as partially neutralized is 2-30 mol% as against the carboxylic group, and preferably 5-20 mol%, and in paragraph [0024] that a water solution of such hetero-valent metal ions is applied to a product from the crosslinking reaction of such polycarboxylic polymer with such organic metal compound, or such product is immersed into such water solution, to cause such metal ions to react with such product.

However, it is not mentioned that the resultant product contains any compound that corresponds to a compound (D) in the invention of the present application.

A person skilled in the art could have easily combined the technology described in document 1 with that in document 2 to make the invention of the present application, and so such a person could have easily reset the ranges of contents or a preferable range of extent of neutralization.

The subject matters of claims 13 and 18 are neither described nor suggested in any of the documents cited in the ISR, and appear to involve an inventive step.

In the invention described in document 1, a compound having a functional group capable of reacting with a functional group in an organic polymer ( $\Delta$ ), is also a compound having an  $\text{SiOR}^2$  group, and it is not suggested there that tetraalkoxysilane is used as a compound that corresponds to a compound (D) in the invention of the present application.